In the Claims:

Please amend the claims as follows:

1. (Amended) A 2 X.2 optical switch having a main propagation axis, comprising:

a) a first 3 dB adiabatic coupler having

i) a first pair of constant width, asymmetric waveguide branches, each said branch extending between a proximal end and a distal end, each said branch having a curved section with a variable curvature, said branches separated over a coupling length by a changing spacing therebetween and blending in a symmetric intersection area at said distal end, and

ii) two symmetric branches connected to said intersection area at said distal end,

b) a second 3 dB adiabatic coupler having

iii) a first pair of constant width, asymmetric waveguide branches, each said branch extending between a proximal end and a distal end, each said branch having a curved section with a variable curvature, said branches separated over a coupling length by a changing spacing therebetween and blending in a symmetric intersection area at said distal end, and

iv) two symmetric branches connected to said intersection area at said distal end, wherein said first and second adiabatic couplers facing each other along the main optical propagation axis in a mirror image,

c) two identical arms connecting said first and second pairs of symmetric branches optically to each other along the main propagation axis, and

d) at least one active element coupled to at least one of said identical arms for dynamically changing an optical property of said at least one arm, whereby the implementation of the switch in a planar lightwave circuit provides a switch that is **[significantly smaller than prior art switches, is]** practically polarization independent, and has a low loss and a very high extinction ratio over an exceptionally broad band range.

2. (Original) The switch of claim 1, wherein said asymmetry of said waveguide branches includes different waveguide widths

3. (Original) The switch of claim 1, wherein said variable curvature is defined by a

finite number of different radii.

4. (Amended) The switch of claim 1, wherein said variable curvature is defined by **[an infinite number of]** a plurality of smoothly and monotonically varying radii.

5. (Amended) The switch of claim 1, wherein said curved waveguide sections are **[approximated and replaced by]** implemented as a series of discrete circular bends with different monotonically decreasing or increasing radii values.

6. (Original) The switch of claim 1, wherein said first and second adiabatic couplers are identical.

7. (Original) The switch of claim 1, wherein each said adiabatic coupler includes a pair of symmetric input/output bends, each said bend connected to a respective said curved section of a branch at said proximal branch end and configured to match the respective width of said branch.

[9] 8. (Amended) The switch of claim 7, wherein at least one of said couplers further includes **[an optional]** a mediating waveguide located between said intersection area and said symmetric branches.

[10] 9. (Original) The switch of claim 7, wherein said connection of each said bend to a respective curved section is mediated by an adiabatic taper.

[11] 10. (Original) The switch of claim 1, wherein said couplers and said identical arms are built of silica on a silicon substrate, and wherein said optical property of said arm includes an index of refraction of said arm.

[12] 11. (Original) The switch of claim **[11]** 10, wherein said extinction ratio is selected from the group consisting of an extinction ratio of at least 30 in the C+L bands, and an extinction ratio of at least 32 in the 10.3 .mu.m wavelength window.

[13] 12. (Original) The switch of claim 1, wherein said at least one active element coupled to at least one of said identical arms includes an active element on each of

said identical arms, whereby a combined use of said two active elements can actively compensate for any asymmetry effect in said arms.

[14] 13 (Withdrawn) An optical switch having a main propagation axis, comprising:

a) a Y-splitter that includes an input waveguide and a pair of symmetric splitter branches,

b) a 3 dB adiabatic coupler having a first pair of constant width, asymmetric waveguide branches, each said branch extending between a proximal end and a distal end, each said branch having a curved section with a variable curvature, said branches separated over a coupling length by a changing spacing therebetween and blending in a symmetric intersection area at said distal end, and two symmetric coupler branches connected to said intersection area at said distal end, said Y-splitter and said adiabatic coupler facing each other with their respective symmetric branches along the main optical propagation axis in a mirror image,

c) two identical arms connecting said pairs of symmetric splitter and coupler branches optically to each other along the propagation axis, and

d) at least one active element coupled to at least one of said identical arms for dynamically changing an optical property of said arm, whereby the implementation of the switch in a planar lightwave circuit provides a switch that is significantly smaller than prior art switches, is practically polarization independent, and has a low loss and a very high extinction ratio over an exceptionally broad band range.

[15] 14 (Witdrawn) The optical switch of claim 13, configured as a switch selected from the group consisting of 1x2 optical switches and 2x1 optical switches.

[16] 15 (Withdrawn) The switch of claim 13, wherein said Y- splitter further includes an adiabatic taper connecting between said input waveguide and said pair of symmetric splitter branches.

[17] 16 (Withdrawn) The switch of claim 13, wherein said asymmetry of said waveguide branches in said 3dB coupler includes different waveguide widths.

[18] 17 (Withdrawn) The switch of claim 13, wherein said variable curvature is defined by a finite number of different radii.

[19] 18. (Withdrawn) The switch of claim 13, wherein said variable curvature is defined by an infinite number of varying radii.

[20] 19. (Withdrawn) The switch of claim 13, wherein said curved waveguide sections are approximated and replaced by a series of discrete circular bends with different monotonically decreasing or increasing radii values.

[21]. 20 (Withdrawn) The switch of claim 13, wherein said Y-splitter, said coupler and said two identical arms are built of silica on a silicon substrate, and wherein said optical property of said arm includes an index of refraction of said arm.

[22] 21. (Withdrawn) The switch of claim 13, wherein said extinction ratio is selected from the group consisting of an extinction ratio of at least 28 in the C+L bands, and an extinction ratio of at least 30 in the 1.3μm wavelength window.

[23] 22. (Original) A 3 dB broadband adiabatic coupler, comprising:

a) a pair of constant width, asymmetric waveguide branches, each said branch having a curved section with a variable curvature, said branches separated over a coupling length by a changing spacing therebetween, and blending in a symmetric intersection area at a distal branch end, and

b) two symmetric branches connected to said intersection area at said distal end.

[24] 23. (Original) The 3 dB coupler of claim **[23]** 22, wherein said asymmetry of said waveguide branches includes different waveguide widths.

[25] 24. (Original) The 3 dB coupler of claim **[23]** 22., wherein said variable curvature is defined by a finite number of different radii.

[26] 25. (Amended) The 3 dB coupler of claim **[23]** 22., wherein said variable curvature is defined by **[an infinite number of]** a plurality of smoothly and monotonically varying radii.

[27] 26. (Amended) The 3 dB coupler of claim **[23]** 22., wherein said curved waveguide sections are **[approximated and replaced by]** implemented as a series of discrete circular bends with different monotonically decreasing or increasing radii values.